

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

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Listing of Claims:

Claims 1-22 (Canceled)

10 23. (New) A Soller slit for collimating high energy radiation comprising:
a plurality of blades having a length, thickness and at least one surface, the plurality of blades being formed from at least a first material having a density less than 6 g/cm^3 , the plurality of blades positioned to transmit radiation substantially parallel to the plurality of blades and to absorb divergent radiation.

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24. (New) The Soller slit of claim 23 having a divergence of less than 0.1° .

25. (New) The Soller slit of claim 23 having a transmission efficiency of at least 60%.

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26. (New) The Soller slit of claim 23, wherein the first material comprises glass.

27. (New) The Soller slit of claim 23, wherein the first material comprises mica.

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28. (New) The Soller slit of claim 23, wherein the transmission efficiency is at least 80%.

30 29. (New) The Soller slit of claim 23, wherein the length of each blade is greater than 5 cm.

30. (New) The Soller slit of claim 29, wherein the length of each blade is at least 12 cm.

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31. (New) The Soller slit of claim 30, wherein the length of each blade is at least 15 cm.

5 32. (New) The Soller slit of claim 23, wherein the thickness of each blade is less than 70 μm .

33. (New) The Soller slit of claim 32, wherein the thickness of each blade is less than 50 μm .

10 34. (New) The Soller slit of claim 23, wherein the surface of each of the blades is non-reflective to high energy radiation.

15 35. (New) The Soller slit of claim 34, wherein the surface of each of the blades is non-reflective to X-rays.

36. (New) The Soller slit of claim 34, wherein the blades each have a non-reflective coating.

20 37. (New) The Soller slit of claim 34, wherein the surface of each of the blades is etched in a manner to prevent reflection.

38. (New) A system for performing high energy radiation diffractometry, comprising:

25 a high energy radiation source;
one or more high energy radiation collimating devices; and
one or more devices for collecting high energy radiation after the high energy radiation impinges on a sample to be examined,
wherein the or each high energy collimating device comprises a plurality of collimating members formed from at least a first material having a density less
30 than 6 g/cm³.

35 39. (New) The diffractometry system of claim 38, wherein the or each high energy collimating device has a divergence of less than 0.1° and a transmission efficiency of at least 60%.

40. (New) The diffractometry system of claim 38, wherein the high energy radiation comprises X-ray radiation.

5 41. (New) The diffractometry system of claim 38, wherein the high energy radiation comprises extreme ultraviolet (EUV) radiation.

42. (New) The diffractometry system of claim 38, wherein the high energy radiation collimating device comprises of one or more Soller slit devices.

10 43. (New) The diffractometry system of claim 38, wherein the first material comprises glass.

15 44. (New) The diffractometry system of claim 38, wherein the first material comprises mica.